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ABSTRACT

Summaries of 89 studies on rural health care (underway or recently completed) in the United States as of December 1976 are reported. Information on each study includes: title; principal researchers' names, addresses, and professions; major objectives of the research; methodology; findings (on completed research); financing organization; current status of research; and availability of findings. Studies are reported under six major headings: alternative models of health care delivery, utilization of health care, distribution of health care resources and education of health personnel, health care planning and policy, and health status, self-care, and health education. An alphabetized list of the 47 researchers reporting on their work is included, along with samples of the form, completed prototype, and cover letter each researcher received. (RS)

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August 1977

SOCIAL SCIENCE RESEARCH ON RURAL HEALTH CARE DELIVERY: A COMPILATION OF RECENT AND ONGOING STUDIES

Sam M. Cordes

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Introduction

The social and economic problems confronting rural America are very much interrelated with the social and economic structure of urban America. At the same time, rural areas do have some characteristics such as sparcity of population that create problems unique to the rural sector. In terms of health care delivery, these unique problems have led to a growing body of rural-oriented research and scholarly literature. During 1975 and 1976 names were compiled of persons who were apparently doing social science research on the delivery of medical care. By December 1976, the list of names had grown to 155 and an attempt was made to systematically ascertain the exact nature of this work.

A form was developed for obtaining information about the research these persons had underway or had recently completed as of December 1976. This reporting form was modified from a similar form used by Blue Cross in compiling research on medical care and medical economics. The modified reporting form along with the necessary instructions for its completion, a completed prototype, and a cover letter (see Appendix) were mailed to the 155 researchers who had been identified. Four letters were returned by the post office and 81 of the remaining 151 persons replied to the inquiry. Of these 81, 28 indicated they had not recently completed any research and did not have any research underway. Six others who responded provided the requested information in a manner that made it unusable. The remaining 47 researchers returned a total of 89 reporting forms. Although some of the research reported did not appear to have a strong rural orientation, all 89 studies have been included in this publication. No editing or modification was made on the information received.

In the publication, each study has been placed into one of the following sections:

I. Alternative Models of Health Care Delivery
II. Expenditures for, and Pricing and Financing of Health Care
III. Utilization of Health Care
IV. Distribution of Health Care Resources and Education of Health Personnel
V. Health Care Planning and Policy
VI. Health Status, Self-Care, and Health Education

In some cases, placing a study in one of these four sections was rather arbitrary, and therefore the interested researcher will probably want to review all the studies. All 47 researchers who submitted completed reporting forms plus other researchers who were listed on the completed forms are alphabetized by last name on p. 50. Following the researcher's name is his or her discipline/profession (if known) and the page number(s) on which their study(ies) appear.

SECTION I: Alternative Models of Health Care Delivery

THE NATIONAL INFORMATION PROGRAM ON RURAL HEALTH CENTER DEVELOPMENT, Co-Directors: Gordon H. Defriese, Director, Health Services Research Center, The University of North Carolina at Chapel Hill, Chapel Hill, NC; James D. Bernstein, Chief, Office of Rural Health Services, NC Dept. of Human Resources, PO Box 12200, Raleigh, NC 27605.

The objective of this program is to develop a series of published materials intended to inform citizen leaders in small rural communities, officials of local, state and federal governmental health programs and professional technical assistance personnel in health-related fields of the potential and developmental feasibility of consumer-sponsored primary health care programs using mid-level (i.e. non-physician) personnel as the principal providers of services.

A further long range objective is to develop a national information clearing-house on rural primary care health programs.

Financing Organization: The Robert Wood Johnson Foundation.

Current Status of Research: Manuscripts are in outline or first draft form.

Availability of Findings: Spring, 1978 from Co-Directors.

EVALUATION OF THE RURAL PRACTICE PROGRAM, Karen Davis and Cathy Schoen, Brookings Institution, 1775 Massachusetts Ave., N.W., Washington, D.C. 20036; and Ray Marshall and Charles Knapp, Center for the Study of Human Resources, University of Texas, Austin, Texas 78712.

The objective of this study is to evaluate the Robert Wood Johnson Rural Practice Demonstration Program. The demonstration program will fund up to 25 model rural practice projects. Each project will be staffed by two or more primary care physicians, a professional manager, primary health practitioners working in a team approach with primary care physicians. Funded practices are nonprofit organizations with representative community boards. The demonstration program is administered by Donald Madison, M.D., University of North Carolina, Chapel Hill, North Carolina.

The evaluation team is developing methodology based on the Rules of Evidence approach, first mentioned by Kenneth Arrow. This methodology is an extension of cost-benefit analysis, but differs in that qualitative as well as quantitative costs and benefits are included in the analysis and no attempt is made to weight benefits. Instead, in an analogy to the judicial system, all evidence pertaining to success or failure is accumulated and presented for judgmental decisions by policy makers. The evaluation model sets forth a hierarchial set of "desirable outcomes."

Differential performance in terms of these outcomes is analyzed including a comprehensive review of determining factors.

Financing Organization: The Robert Wood Johnson Foundation.

Current Status of Project: Beginning baseline analysis on 3 funded practices.

Availability of Findings: Summary of first three years experience due January 1979.

RURAL HEALTH CARE IN THE SOUTH, Karen Davis, Brookings Institution, 1775 Massachusetts Ave., N.W., Washington, D.C. 20036 and Ray Marshall, University of Texas, Austin, Texas 78712.

The objectives of this study are to examine trends and determinants of health status among rural Southerners, to investigate alternative innovative primary care delivery projects and isolate effective models of primary care delivery models in different rural settings, to analyze the effects of major public medical care programs on the rural South, and to develop specific recommendations to determine how governmental programs can better meet the health needs of rural residents.

To pursue these objectives, the study has accumulated extensive statistical data on health conditions of the rural South from national surveys, state and local data sources, and previous studies conducted by other researchers. The study also site visited more than 50 innovative rural primary care delivery projects in the 13-state South, and collected detailed information on the history and organization of the project, health problems and characteristics of the target population, services provided and use of the facility, personnel, costs, revenues, other health care facilities and personnel in the area and relationships of the project with these other parts of the medical system, community and health impacts of the project, and special obstacles encountered in establishing the practice.

Financing Organization: The Robert Wood Johnson Foundation.

Current Status of Project: Preliminary reports available.

Availability of Findings: Final Report, December 1977, from principal researchers.

THE GROWTH OF GROUP PRACTICE, Barry S. Eisenberg and Philip G. Cotterill, Center for Research and Development, American Medical Association, 535 N. Dearborn, Chicago, 60601.

Research previously conducted for the Robert Wood Johnson Foundation indicates that opportunity to join a group practice is an important

determinant of a physician's location decision. This effect appears to be particularly important in nonmetropolitan areas. Based on this evidence federal funds have recently been appropriated to promote the growth of group practice in rural areas.

Unfortunately at the present time not much is known about what factors influence the growth of group practice and what types of group practice (with respect to organizational qualities) do best in nonmetropolitan areas. Are they the same factors which are important to group practice growth in metropolitan areas or do nonmetropolitan areas have certain socioeconomic characteristics which make development of groups more or less difficult.

This study addresses these questions using data merged from the 1969 Survey of Group Practice, the 1975 Survey of Group Practice, the Periodic Survey of Physicians and the AMA Physician Master-file. A model of group practice growth for different geographic areas is developed using economic, demographic, physician, and group practice characteristics as explanatory variables.

Financing Organization: The American Medical Association.

Current Status of Research: Data compilation and modeling procedures in progress.

Availability of Findings: April 1977, from principal researchers.

THE EFFECTS OF THE MEDEX IN RURAL HEALTH CARE, Howard Chamberlain and A. B. Drui, Department of Management, Texas A&M University, College Station, TX 77843, and Mechanical Engineering, University of Washington, Seattle, WA 98105.

The objective of this study was to measure the changes in number, type, and location of patient contacts in selected physicians' practices. Also, the effort required to maintain the practice was measured and the type of work as well as the working relationships performed by each skill type was recorded.

The MEDEX was placed in selected rural practices in Eastern Washington state during late 1969. Data was taken prior to his entry into the practice and then nine months after he had entered the practice.

Analysis of the data showed that the MEDEX increased the productivity of the practice, however, the amount of this productivity improvement varied over a broad range. Analysis of the working relationships indicated that the MEDEX took over many of the jobs formerly done by the nurse. Analysis of the changes in patient diagnosis, patient contact locations, and patient dispositions, showed that there were no significant changes in patient characteristics between the two samples.

Financing Organizations: The U.S. Department of Health Education and Welfare.

Current Status of the Research: Preliminary analysis complete.

Availability of Findings: Doctoral Dissertation on file at "The University of Washington MEDEX Evaluation Procedure", graduate college of Business Administration, 1973. Advanced analysis Fall, 1977, from principle researchers.

NEGATIVE FINDINGS ON THE RURAL CLINICS, Robert F. Hill, Judith Greenwood, and Frank Wert, Physician's Associate Program, University of Oklahoma Health Sciences Center, P.O. Box 26901, Oklahoma City, Oklahoma 73190.

Conclusions result from work done on the study entitled "Final Report for Evaluation of a Satellite Clinic Operated by a Physician's Assistant" by R. F. Hill and J. H. Greenwood.

Among proposed solutions to the problem of physician maldistribution, attention has recently focused on rural clinics operated by new health practitioners. From a two year study of one such clinic in rural Oklahoma (title above), which included comparison with 3 Oklahoma control clinics and numerous N.H.P. operated clinics in other states, it is concluded that: (1) underutilization is prevalent and acceptance is "soft" based on low patient volume and high frequency of "simple" medical problems; (2) quality care is questionable, based on low frequency of performance of quality criteria on medical records and professional isolation; and (3) economic viability is doubtful, based on consistently low fees and dependence on outside subsidy. The weight of evidence has now shifted away from favoring the "new rural clinics" solution.

Financing Organization: D.H.E.W. Contract #296-74-0001.

Current Status of Research: Completed.

Availability of Findings: "Final Report" and "Negative Findings" from principal researchers.

INSTITUTIONAL AND FINANCIAL CONSIDERATIONS IN THE EMPLOYMENT OF PHYSICIAN EXTENDERS IN RURAL AREAS, Neil Meyer, Division of Agricultural and Resource Economics, University of Idaho, Moscow, Idaho 83843; Hans D. Radtke, Division of Agricultural and Resource Economics, University of Nevada - Reno, Reno, Nevada 89557.

The objective of this study is to determine the institutional and financial constraints that have to be considered in establishing para-medical services and facilities in very rural areas.

From surveys, the costs of such a service will be related to different institutional arrangements.

Financing Organization: University of Idaho Extension Service; University of Nevada Extension Service.

Current Status of Research: Just starting (December 1976).

Availability of Findings: Should be ready Fall of 1977.

CONFLICTING SOCIAL GOAL AND THE CHOICE OF REGULATORY INSTRUMENTS: AN APPLICATION IN LONG TERM HEALTH CARE FACILITIES, Jon Christianson, Department of Agricultural Economics and Economics, Montana State University, Bozeman, MT 59715.

The objectives of the research are to develop a methodology for evaluating regulatory behavior and to examine the consequences of this behavior for rural long-term health care facilities. Data on costs, operating characteristics, and regulatory compliance in Montana long-term care facilities were collected in the research. Goal programming and regression analysis were both employed in evaluating this data. Regulations on staffing impacted heavily on rural facilities, but costs were not related significantly to differential compliance performance.

Financing Organization: National Science Foundation.

Current Status of Research: Near completion.

Availability of Findings: March 1977, from principal researchers.

FURTHER EVIDENCE ON THE RELATIVE PERFORMANCE OF PROPRIETARY AND NONPROFIT HOSPITALS, John Kushman and Carole Nuckton, Department of Agricultural Economics, University of California at Davis, Davis, CA 95616.

Extends the empirical evidence on the relative responsiveness of proprietary and nonprofit hospitals to changes in their economic environment. Demonstrates that previous models can give inconsistent policy implications depending on the relative size of hospital bed stocks.

Multiple regression analysis is used on four six-year cross sections of state data. A model is used which gives unambiguous policy implications.

Concluded that proprietary bed stocks are proportionally more responsive to changes in the economic environment than nonprofit stocks. The nonprofit stocks show a larger absolute response. A hypothesis that income growth is associated with conversion to nonprofit status is rejected. The shift in emphasis of the Hill-Burton program in 1964 is shown to have had no impact on the pattern of bed stock growth. Propri-

etary hospitals have a significant part to play in an efficient hospital system and the new HSA's must recognize their importance.

Financing Organization: University of California and California Agricultural Experiment Station.

Current Status of Research: Publication of results forthcoming.

Availability of Findings: Medical Care early 1977.

STUDY OF EMERGENCY MEDICAL SERVICES IN INDIANA, Charles Sargent and Vern Ryan, Department of Agricultural Economics, Purdue University, West Lafayette, IN 47906.

Three pieces of work done or underway:

1) Case study of different types of ambulance services in 1974. Focused on organization, personnel, financing, etc. Reported in Station Bulletin No. 54 "A Study of Emergency Medical Services in Indiana, Sept. 1974 and EC440 (1974) "If Your County Wants Better Emergency Medical Services".

2) Inventory of all ambulance services in the state in cooperation with the Indiana EMS Commission. Results being tabulated from 394 providers operating in summer of 1975.

3) Categorization of emergency medical facilities in hospitals, plus evaluation of the changing role of the emergency department. Work in progress.

Financing Organization: Purdue University Agricultural Experiment Station and Indiana EMS Commission.

Availability of Findings: See publications mentioned and other findings available in 1977 from researchers.

EVALUATION OF MODEL PROJECT FOR THE AGED: CRAWFORD COUNTY, ARKANSAS, Mary Jo Grinstead-Schneider, Donald Voth, and Martha Leatherman, Department of Agricultural Economics and Rural Sociology, University of Arkansas, Fayetteville, AR 72701.

The objective of this study is to determine the effectiveness of a model program for the elderly in reducing the incidence of institutionalization. The model program will provide a variety of social services, including congregate meals, medical screening, transportation, and alternative living arrangements. The panel design consists of collecting data from 200 elderly in the experimental (Pilot Program) county and 200 in a control county with a similar socioeconomic and demographic profile. The panel will be contacted at 2 points: before the inception of the program and 24 months after the comprehensive

preventive program has been established. The operation of specific program components will also be monitored.

Financing Organization: Arkansas Agency on Aging and West. Ark. Planning and Development District; EDD, ERS, USDA, and University of Arkansas Agricultural Experiment Station, Fayetteville.

Current Status of Research: Collection of data has just begun.

Availability of Findings: Summer, 1979, from principal investigators.

ECONOMICS OF THE CHRONIC DISEASE MODULE AND ALTERNATIVE HOME HEALTH CARE SYSTEMS FOR THE CHRONICALLY ILL, Robert D. Stevens and Anne Cunningham, Office of Health Services, Education and Research, College of Human Medicine, Michigan State University, East Lansing, MI 48823.

Analysis of the resources used in a demonstration home care program for chronic disease patients in five communities of Michigan. Costs of service ranged from $113 to $89 for an average of 3.2 visits per month to each patient. Analysis of the economic effect of the home care program on the health status of patients is underway.

Financing Organization: HEW contract HSO 1059-04 with Sidney Katz, M.D. principal investigator.

Current Status of Research: Final analysis and write-up underway.

Availability of Findings: Community Care: The Chronic Disease Service Module-Progress Report, Office of Health Services, Education and Research, Michigan State University, July, 1976. Final report will be published in 1978.

SECTION II: Expenditures for, and Pricing and Financing of Health Care

FINANCING RURAL HEALTH SERVICES, Sylvia Lane, Department of Agricultural Economics, University of California, Davis, CA 95616. IN RURAL HEALTH: ORGANIZATION, DELIVERY, AND USE, Hassenger, Edward W. and Larry R. Whiting, Editors, Ames, Iowa, State University Press, pages 95-105 (Chapter 6).

This chapter resulted from a study of the financing of consumer medical expense. The focus of this particular study is whether consumers will be able to afford to pay for medical care and which consumers in rural areas will not be able to do so without governmental assistance in the payment of health insurance premiums.

Financing Organization: The University of California's Experiment Station.

Current Status of Research: The project is continuing. The current focus is on group versus individual health insurance policies.

Availability of Findings: FINANCING RURAL HEALTH SERVICES IS AVAILABLE FROM THE IOWA STATE UNIVERSITY PRESS.

CONSUMER MEDICAL EXPENSE INSURANCE by Sylvia Lane, Department of Agricultural Economics, University of California, Davis, CA 95616.

This is a theoretical study of the costs and benefits of individual versus group health insurance policies. It is anticipated that predictions from the model may be tested using data emanating from the Rhode Island state-wide health insurance experience.

Financing Organization: The University of California's Agricultural Experiment Station.

Current Status of Research: The paper describing the model is being revised.

Availability of Findings: Theoretical Model, Summer 1977, from principal researcher.

THE DEMAND FOR MEDICAL CARE, A HEALTH CAPITAL APPROACH, Cleve Willis and Douglas Chiriboga, Department of Food and Resource Economics, University of Massachusetts, Amherst, MA 01003.

The objective of this study is to investigate the demand for medical care, where this demand is viewed as a demand derived from the demand for "health", and other variables affect health in addition to medical care inputs. The present focus is on adapting and extending human capital theories recently advanced by Becker, Schultz, and others. Empirical work has just been completed which supports the hypothesis advanced by Michaels that "increases in education change compositions of goods and services demanded in the same direction as do increases in income" for the case of purchase of private health insurance. This work involved estimation of an Engel curve, where purchase of such insurance depends on such factors as education, income, age, sex, and others.

Financing Organization: University of Massachusetts Agricultural Experiment Station.

Current Status of Research: Analysis of data is completed and implications are being developed.

Availability of Findings: Summer 1977, from principal researchers.

PRICING HEALTH SERVICES: THE CASE OF DENTISTRY, John Kushman and Richard Scheffler, Department of Agricultural Economics, University of California at Davis, Davis, CA 95616 and Department of Economics, University of North Carolina at Chapel Hill, Chapel Hill, NC 27514.

A monopoly model of dental service pricing is tested using multiple regression on a large number of data on individual dentists and on aggregate data. The impact of fluoridation on dental service prices is investigated as well as the impact of patient income and the age of the dentist.

It is concluded that the monopoly model is consistent with the data. Fluoridation reduces service prices, although the proportionate effect is rather small. Prices are positively related to the patient population's income, costs of production, and the number of dentists per capita. The last relationship is ascribed to travel time, queuing, and convenience factors. Older dentists appear to have lower prices due to technical obsolesence and deterioration of clinical skills.

Financing Organization: University of California and U.S. Department of HEW.

Current Status of Research: Research completed.

Availability of Findings: From the principal investigators.

FACTORS AFFECTING THE FINANCIAL SELF-SUFFICIENCY OF SUBSIDIZED PRIMARY HEALTH CARE CENTERS, Sam Cordes, Department of Agricultural Economics, Penn State University, University Park, PA 16802 and Bernal Green, Economic Development Division, USDA, Washington, DC 20250.

A number of subsidized rural primary health care centers (PHCC's) have been established through such programs and agencies as the Appalachia Regional Commission, the Health to Underserved Rural Areas, and Rural Health Initiative. The legislative intent is for these centers to become financially self-sufficient within 3-5 years. The primary objective of this research is to isolate and determine the relative importance of various factors believed to be important in influencing the financial self-sufficiency of these PHCC's. A small sample of PHCC's in Pennsylvania, with varying levels of financial self-sufficiency, will be chosen for analysis. Two types of data will be gathered. One type of data will be on the social, economic, and demographic characteristics of the areas served by the clinics. The other type of data will be on the internal structure of the clinic, e.g., staffing patterns, wage and salary rates for personnel, and fee levels.

Financing Organization: Economic Development Division, Economic Research Service, USDA, Washington, DC 20250.

Current Status of Research: Administrative arrangements for initiating the research project are being finalized.

Availability of Findings: Late 1978 from principal investigators.

ANALYSIS OF DENTAL SERVICE PRODUCTION WITH APPLICATION TO IMPLICIT WAGE RATES FOR DENTISTS

Part I: Richard Scheffler, Department of Economics, University of North Carolina at Chapel Hill, Chapel Hill, NC 27514 and John Kushman, Department of Agricultural Economics, University of California at Davis, Davis, CA 95616.

Part II: John Kushman.

Part I estimates a production function for dental services using data from 1968 on individual dentists. The resulting production function estimate is used to test a theory of profit maximization. The data are consistent with the theory, and the model is then applied to estimating implicit wage rates for dentists' time.

Part II replicates the estimation of a production function with 1974 data on California dentists. The production function is used to estimate the form of the distribution of implicit wage rates for dentists and to test hypotheses about the variation in wage rates with age, marital status, and location of the dentists. The results will provide insight into the marginal cost of dental services delivered in the traditional fashion to presently underserved populations.

Financing Organization: University of California, California Agricultural Experiment Station, University of North Carolina, U.S. Department of HEW.

Current Status of Research: Part I partially completed. Analysis continuing.

Availability of Findings: Scheffler and Kushman, "A Production Function for Dental Services: Estimation and Economic Implications." Southern Economic Journal July 1977. Principal investigator, late Fall 1977.

ECONOMICS OF A SMALL RURAL PHYSICIAN PRACTICE IN NEVADA, H. D. Radtke and Tom Nordblom, Division of Agricultural and Resource Economics, University of Nevada, Reno, Reno, Nevada 89557.

The objective of this study was to determine the costs of providing medical services in very rural areas. This information is to be used to help communities make resource allocation decisions.

For a rural community to be attractive to present and future residents, basic services and facilities in any rural community depends largely upon economics which, in turn, depends upon population densities and distances between population centers. At a very minimum, 1,300 residents are needed to generate enough revenue, on a fee-for-service basis, to cover the costs of a single-physician clinic. The population base needed to support a physician in any community has to increase as more people travel to other areas to receive their medical treatment.

Financing Organization: Regional Medical Program, Nevada Extension Service.

Current Status of Research: Completed October 1975.

Availability of Findings: Nevada Extension Circular 167.

THE ECONOMICS OF SMALL RURAL HOSPITALS IN NEVADA, H. D. Radtke and Tom Nordblom, Division of Agricultural and Resource Economics, University of Nevada, Reno, Reno, Nevada 89557.

The objective of this study was to determine the costs of providing hospital services in very rural areas. This information is to be used to help communities make resource allocation decisions.

Federal grants have enabled some of the smaller Nevada communities to build new and modern hospitals. Minimum construction costs for such facilities are about one million dollars. However, more important to county governments is that it takes about one-third of a million dollars per year to operate such a minimum sized hospital. Because of the low population density and low home town hospital usage rates, occupancy rates of rural hospitals are often below the economic break-even point. Many rural hospitals are, therefore, subsidized by county taxes.

Financing Organization: Regional Medical Program, Nevada Extension Service.

Current Status of Research: Completed December 1976.

Availability of Findings: Nevada Extension Circular 178.

AN ANALYSIS OF THE COST EXPERIENCE OF DISTRICT HOSPITALS IN CALIFORNIA, Thaine H. Allison, Jr., California Health Facilities Commission (CHFC), Suite 525, 555 Capitol Mall, Sacramento, CA 95814.

This study is designed to analyze the cost per patient stay in 64 district hospitals located throughout the State of California. District hospitals are units of local government with taxing authority and are the primary means of organizing hospitals in rural areas of the state. A multiple regression model is specified which has as major variables: an eight category rural-urban location variable; an education program index using principal component analysis; a service mix index; and various factors measuring case mix, occupancy, size, capital and labor. Data is derived from the 1974-75 fiscal year financial disclosure reports used in conjunction with the Commission's Uniform Accounting System. The various indexes included in the model may be of interest to other researchers as separate methodological studies.

Financing Organization: California Health Facilities Commission.

Current Status: Preliminary results are completed.

Availability of Findings: February 1, 1977, from the CHFC.

BUDGET ANALYSIS OF RURAL HOSPITALS AND CLINICS IN THE GREAT PLAINS, Gerald Doeksen, Ivan Hanson, and Bernal Green, EDD, ERS, USDA, Department of Agricultural Economics, Oklahoma State University, Stillwater, OK 74074.

The objective of this study is to devise capital and operating budgets for rural hospitals and clinics. The budgets will be completed for a 35 and a 75 bed hospital and two size clinics. Records from hospitals and clinics are being used to devise operation budgets whereas capital costs data are coming from records of recently completed projects and engineering data.

Financing Organization: EDD, ERS, USDA.

Current Status of Research: Project about half completed.

Availability of Findings: Late 1977.

LOCAL GOVERNMENT SUBSIDIZATION OF HEALTH CARE IN RURAL WESTERN STATES, Jon Christianson, Department of Agricultural Economics and Economics, Montana State University, Bozeman, MT 59715.

The objective of the research is to determine the factors which influence the allocation of funds to health care by local governmental units in rural western states. A model of the budget decisions of these governments will be estimated using budget and census data. The empirical results will be used to predict how alterations in county budget constraints would affect expenditures on health care.

Financing Organization: The Montana State University Agricultural Experiment Station.

Current Status of Research: Data collection stage.

Availability of Findings: Intermediate results available Spring, 1978, from principal researcher.

THE ECONOMICS OF INSTITUTIONAL ARRANGEMENTS FOR VIABLE RURAL COMMUNITIES IN THE GREAT PLAINS, Wyo 72-79 (NC-102), Willard D. Schutz, Division of Agricultural Economics, University of Wyoming, Laramie 82071.

The general objective of this study is to develop information which can be used to make rural America, and the Great Plains specifically, a better place in which to live. The more specific objective has been to determine the assessibility of community services, private costs associated with them, and main problems of consumers.

As part of the project, Wyoming has completed a study "The Economic Costs of Providing Ambulance Services in Wyoming," B. 624, April, 1975. The study was based on a survey conducted in the eastern part of the state and was descriptive in nature.

Presently we are examining hospital-medical clinic relationships in furtherance of this research.

Financing Organization: University of Wyoming Agricultural Experiment Station.

Current Status of Research: Ambulance study completed; hospital-medical clinic study in the data evaluation and preparation stage.

SECTION III: Utilization of Health Care

UTILIZATION OF HEALTH SERVICES IN THE GREAT PLAINS, Gerald Doeksen, Alan May, and Bernal Green, EDD, ERS, USDA, Department of Agricultural Economics, Oklahoma State University, Stillwater, OK 74074.

The primary objective of this report is to provide utilization rates which local decision makers can use to estimate local needs for specific health services in the Great Plains. More specifically, the objectives are (1) to provide physician visit utilization rates; (2) to provide hospital utilization rates by age, sex, and disease; (3) to provide emergency room utilization rates; and to provide ambulance utilization rates. Local physician utilization data were not available, thus results from national ambulatory medical care survey were used. For hospital utilization, records from Blue Cross-Blue Shield were used (consisted of over 450 thousand persons) to derive hospital utilization rates by 6 age categories, by sex and by 18 disease categories. Emergency room and ambulance utilization were derived from local surveys.

Financing Organization: EDD, ERS, USDA.

Current Status of Research: First draft of report complete.

Availability of Findings: March 1977.

FACTORS ASSOCIATED WITH USE OF AND SATISFACTION WITH HEALTH SERVICES IN NONMETROPOLITAN NORTHEAST U.S., Charles Crawford and Sam M. Cordes, Dept. of Agricultural Economics and Rural Sociology, University Park, PA 16801.

The objective of this study is to examine use, satisfaction and problems in use of legal, health, housing and education services among a group of 2,141 households from 13 sites in 10 Northeastern states. Sites were selected from among "expanding," "stable" and "declining" nonmetropolitan counties in the Northeast. Explanatory variables will include household and community characteristics. Data were collected in 1974 and 1975.

Financing Organization: Agricultural Experiment Stations in Connecticut, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Vermont and West Virginia.

Current Status of Research: Data collection completed, analysis well underway.

Availability of Findings: Spring or Summer 1977.

CHANCING THE POOR OR CHANGING THE SYSTEM?--A BASIC ISSUE IN IMPROVING THE POOR'S USE OF MEDICAL SERVICES, Mary Hazen-Osgood and Sam Cordes, Department of Agricultural Economics and Rural Sociology, Penn State University, University Park, PA 16802.

The objective of this study was to review the empirical literature dealing with usage of health services by poor persons to determine whether the poor's use of medical services can best be improved by "changing the poor" or "changing the system" by which medical services are delivered. The conclusion from this review of the literature was that changing the system should be highest priority; if medical services are made readily available and accessible to the poor, they will likely make even greater use of these services than the nonpoor due to a greater "need" for services among the poor.

Financing Organization: Department of Agricultural Economics and Rural Sociology and Agricultural Experiment Station.

Current Status of Research: Completed.

Availability of Findings: Available from the Department of Agricultural Economics and Rural Sociology.

ACCESS OF WELFARE PATIENTS TO PHYSICIANS' AND DENTISTS' SERVICES, John E. Kushman, Department of Agricultural Economics, University of California at Davis, Davis, CA 95616.

The objective is to identify and quantify the determinants of the policies of private practice physicians and dentists with respect to treating Medicaid patients. Variations in treatment accessibility are examined over geographical areas and practitioner characteristics such as age and mode of practice. A profit maximization model is used to form and test hypotheses about treatment accessibility. An alternative is that the treatment decision is a mirror image of the patient-initiated demand for care.

Preliminary findings are that profit maximization is an appropriate model. Important interactions exist between practitioner characteristics such as age and mode of practice. Some physicians appear to withdraw from the Medicaid market rather than incur the high costs of a large Medicaid patient load. The decision to treat Medicaid patients is largely determined by the private patient demand for services. The relationship between the treatment decision and the business of the practitioner provides evidence on the market structure.

Chi-square tests for independence are used on data on dentists. Multiple regression analysis is used to analyze regional data on physician behavior and tests of independence are used on individual physician data.

Financing Organization: The University of California.

Current Status of Research: Analysis continuing.

Availability of Findings: Summer 1977 from principal researcher.

THE ROCKFORD SCHOOL OF MEDICINE COMMUNITY HEALTH CENTER SYSTEM: BASELINE STUDIES FOR ASSESSING IMPACTS ON MEDICAL CARE IN RURAL COMMUNITIES, Joel B. Cowen, Office for Community Health Research, Rockford School of Medicine, University of Illinois, Rockford, IL 61101.

The Rockford School of Medicine Community Health Center Program provides an educational program in ambulatory care for medical students while providing comprehensive medical care to nearby communities which lack sufficient accessible care. Three centers are currently in operation. The baseline studies have been accurate in forecasting future utilization levels.

Preceding the establishment of a CHC, the Office for Community Health Research conducts baseline surveys of current patterns of health care utilization and estimates potential use based on resident responses. Surveys have been completed in Belvidere, Durand, Kirkland, Mt. Morris-Oregon, and Rockton. Sample size varies from 200 to 1,200 households, depending on town size. Both mail and civic group distribution of questionnaires has been used with an average response rate of 60%.

Follow-up studies will assess changes in patterns of medical care including level of visits and hospitalization, as well as satisfaction with care.

Financing Organization: Rockford School of Medicine, University of Illinois.

Current Status of Research: Completed.

Availability of Findings: Available.

QUASI-EXPERIMENTAL CONTROLLED TRIAL OF A NATIONAL HEALTH SERVICE CORPS SITE, Robert Kane and Donna Olsen, Department of Family and Community Medicine, University of Utah College of Medicine, Salt Lake City, Utah 84132.

This study compares before and after data on a rural county in which a National Service Corps site was placed in comparison to similar data gathered on a controlled county where no changes in the health care delivery system took place. It is focused primarily on utilization behavior, attitudes and knowledge about the National Service Corps. A random sample of each county was studied first in 1971 and again in 1976 to provide the base for this analysis.

Financing Organization: National Center for Health Services Research.

Current Status of Research: Data collected, analysis under way.

Availability of Findings: Summer 1977, to be submitted for publication.

MEASURING THE EFFECTIVENESS OF RURAL HEALTH CARE, Robert Kane, Donna Olsen and Ross Woolley, Department of Family and Community Medicine, University of Utah College of Medicine, Salt Lake City, Utah 84132.

This study is an attempt to predict the utilization of rural health care delivery programs such as those sponsored by HURA, RHI and the National Service Corps. A regression model will be used to predict utilization based on expected utilization (after statistical manipulation to account for demographic factors) from a national health survey, past utilization within a community, and various measures of community participation. The data gathering has been designed to utilize secondary sources. A sub-study of alternative proxies for past utilization of health care will be tested. This study will be confined to Region VIII.

Financing Organization: Regional Office, DHEW, Region VIII.

Current Status of Research: Just begun.

Availability of Findings: October 1977.

AN ANALYSIS OF THE PROCESSING OF PATIENTS IN A RURAL MEDICAL CARE DELIVERY SYSTEM, Dr. Richard Reid, Department of Family, Community and Emergency Medicine, School of Medicine and School of Business and Administrative Sciences, University of New Mexico 87131.

A study of the processing of patients at the rural clinic of a medical care delivery system was done to describe quantitatively the movement of patients from their arrival to their departure. The data collected provided a statistical summary of the sequence and duration of observed events in the medical care process as they related to the patients. An analysis of 485 patient visits that were observed on 60 random days during a 12-month period showed that patient arrival rates were generally higher during the morning. The average visit lasted 74 minutes; 94 percent of this time was spent in the waiting and examination rooms. The period that the patient spent unattended by clinic personnel represented three-fourths of the average patient's total time in the delivery system. Data analysis indicated that if patients were admitted to an unoccupied examination room as soon as possible after their arrival and if standing orders for the family nurse practitioner were expanded, a significant reduction would occur in the average patients unattended visit time.

Financing Organization: HSMHA Contract Number 110-69-241.

Current Status of Research: Finished.

Availability of Findings: Public Health Reports, Vol. 91 (Sept-Oct, 1976) pp. 471-76.

FACTORS AFFECTING THE USE OF PHYSICIAN SERVICES IN A RURAL COMMUNITY, Harold S. Luft, John C. Hershey, Joan Morrell, Health Services Research, Family, Community, and Preventive Medicine, Stanford University, Stanford, CA 94305.

This study examines the relative importance of various independent variables for predicting five separate measures of physician utilization in a rural community. The independent variables include socioeconomic, demographic, attitudinal, and health status factors. The results are comparable to those of national studies which find that health status is the primary determinant of utilization. Income, price measures, and travel time are notable for their relative unimportance in this rural area. This suggests that resources are more likely to be allocated on the basis of medical need within a given health care market than across a number of market areas.

Financing Organization: National Center for Health Services Research.

Current Status of Research: Completed.

Availability of Findings: American Journal of Public Health 66:9, September 1976; Medical Care 13:10, October 1975.

PATTERNS IN THE USE OF PHYSICIANS' SERVICES IN ARKANSAS, MAY 1972 TO APRIL 1973, Mary Jo Grinstead, John F. McCoy, and Bernal L. Green, Dept. of Agri. Econ. and Rural Soc., University of Arkansas, Fayetteville, AR 72701, and Arkansas Health Statistic Center, Little Rock, AR.

Analysis of data based on a sample size of 11,663 individuals in the 1973 Arkansas Health Interview Survey produced the following results. (1) Rates of physician consultation were higher among upper-income respondents, (2) Residence only minimally affected physician use, (3) Physicians tended to see slightly more male than female patients age 16 or younger. However, from age 17 on, females were more likely to consult physicians, (4) Physician usage was moderately high among the very young, then declining until adulthood. The rate then climbed steadily with advancing age, with the elderly (age 65 and over) exhibiting the highest rate of physician use, (5) The rate of physician consultation was higher among whites than nonwhites, with nonwhites reporting more instances where they failed to obtain the physician attention they desired.

Financing Organization: EDD, ERS, USDA, and University of Arkansas Agricultural Experiment Station, Fayetteville.

Current Status of Research: Published.

Availability of Findings: Arkansas Experiment Station Spec. Rpt. 27, Feb., 1976. Fayetteville, AR 72701.

UTILIZATION OF DENTAL SERVICES IN ARKANSAS, MAY 1972 TO APRIL 1973, Mary Jo Grinstead-Schneider, Bernal L. Green, and John F. McCoy, Dept. of Agri. Econ. and Rural Soc., Univ. of Ark., Fayetteville, and Arkansas Health Statistics Center, Little Rock, AR.

This report analyzed data from the 1973 Arkansas Health Interview Survey to assess the effect of various socioeconomic and demographic variables upon dental use patterns in the state. Major findings included: (1) 1972 per capita dental usage for the U.S. was 1.5, compared with .83 for Arkansas in the same year; (2) 37% of Arkansans visited a dentist, 1972, compared with 47.3% nationally; (3) Upper-income respondents were more likely than lower-income respondents to obtain dental assistance; (4) The relationship between age and dental use can be depicted by an inverted U; (5) Females are more likely than males to consult dentists; (6) Urban residents use dentists' services more than rural residents; (7) Dentist: population ratios appeared to be associated with rates of dental consultation; (8) Dentist: population ratios were most favorable in areas where family incomes are highest; (9) Lower-income persons were more likely than upper-income respondents to feel that they had done without needed dental assistance.

Financing Organization: EDD, ERS, USDA, and University of Arkansas Agricultural Experiment Station, Fayetteville.

Current Status of Research: manuscript completed.

Availability of Findings: from principal investigators.

PATTERNS OF HOSPITAL USE IN ARKANSAS, MAY 1, 1972, TO APRIL 30, 1973, Mary Jo Grinstead, John F. McCoy, and Bernal L. Green, Dept. of Agri. Econ. and Rural Soc., Univ. of Ark., Fayetteville, AR 72701, and Arkansas Health Statistics Center, Little Rock, AR.

This study analyzed data on socioeconomic factors affecting hospitalization from a statewide personal health survey. The statewide survey included 4,214 households which represented 12,556 individuals. Approximately 14% of those surveyed had been hospital inpatients during the last year, but among those age 65 and above, 22% reported a hospital admission. Although admission rates did not vary substantially in response to income, lower income persons tended to have longer stays. Rural-urban differences did not have marked effect on hospital use. Sex differences were moderate, except among females age 17-44 who are in the main childbearing age. Non-whites made less use of hospital services but once admitted tended to stay longer. Age consistently appeared to be the most important variable associated with hospital use. Hospital admission plotted by age followed a generally U-shaped curve.

Financing Organization: EDD, ERS, USDA, and University of Arkansas Agricultural Experiment Station, Fayetteville.

Current Status of Research: Published.

Availability of Findings: Arkansas Experiment Station Spec. Rpt. 26, Feb., 1976. Fayetteville, AR 72701.

SECTION IV: Distribution of Health Care Resources and Education of Health Personnel

CHANGES IN MEDICAL SERVICES IN MICHIGAN COUNTIES AND REGIONS 1961-1975
Robert D. Stevens and James A. Chapman

Objectives are 1) to make available county data on physicians and hospital beds, 2) to measure changes in the geographic location of the medical care industry, 3) to examine changes in per capita availability of medical services by county, and 4) to estimate per capita availability of medical services by regions of the state.

Financing Organization: Financed by the Michigan Agricultural Experiment Station.

Current Status of Research: Study is in the final stages of writing.

Availability of Findings: Findings will be available in a Michigan Agricultural Experiment Station Bulletin in 1978.

LONGITUDINAL ANALYSIS OF THE GEOGRAPHIC DISTRIBUTION OF M.D.'S, HOSPITALS, AND HOSPITAL BEDS IN THE NORTHEAST U.S., Sam Cordes, Department of Agricultural Economics, Penn State University, University Park, PA 16802.

This study is basically descriptive rather than explanatory. Its basic purpose is to describe changes in the distribution of M.D.'s, hospitals, and hospital beds in the Northeastern U.S. for the ten-year, period, 1963-1973. To meet this purpose a data bank of the number of M.D.'s, hospitals, and hospital beds in each of the 299 counties in the Northeast has been developed.

Financing Organization: The Pennsylvania State University's Agricultural Experiment Station.

Current Status of Research: Data Bank is near completion.

Availability of Findings: Early 1978, from principal researcher.

MULTIVARIATE ANALYSIS OF PHYSICIAN DISTRIBUTION IN THE NORTHEAST U.S., Richard Blair and Sam Cordes. Department of Agricultural Economics, Penn State University, University Park, PA 16802

The major objective of this study was to determine the effect of various social and economic variables on the geographic distribution of physicians. Data were compiled for all 299 counties in the Northeast U.S. Specific independent variables included each county's: age, sex, occupation, and racial composition; quantity and quality of physician

support services; and social and cultural amenities. Using multivariate analysis these independent variables were related to five separate dependent variables: all physicians, office-based physicians, hospital-based physicians, office-based specialists, and office-based general practitioners. Generally, variables that related to economic factors and physician support services were the most important in terms of explaining the variation in physician distribution. Surprisingly, the various measures of a county's social and cultural amenities were not important explanatory variables.

Financing Organization: The Pennsylvania State University's Agricultural Experiment Station.

Current Status of Research: Completed.

Availability of Findings: From Sam Cordes.

WEISKOTTEN SURVEY, CLASS OF 1960: A PROFILE OF PHYSICIAN LOCATION AND SPECIALTY CHOICE, Lawrence Schwartz and James Cantwell, Center for Health Services Research, American Medical Association, 535 N. Dearborn, Chicago, IL 60610.

This survey is the eighth in a series which has included every fifth American medical school graduating class, starting with the class of 1915. The questionnaire design differed from previous Weiskotten studies and emphasized attitudes towards location information not contained in the American Medical Association Physician Masterfile. Traditional tabular comparisons are focused on contemporary locational policy needs. The findings and methodology of this study are generally similar to those of many earlier studies of both physician location and, in a very limited way, of specialty choice. The paper contains findings on certain characteristics of physicians who move their practice and those who do not.

Financing Organization: American Medical Association.

Current Status of Research: Completed.

Availability of Findings: Journal of Medical Education, Vol. 51 (July 1976) 533-540.

MEDICAL SCHOOL, RESIDENCY, AND EVENTUAL PRACTICE LOCATION, Toward a Rationale for State Support of Medical Education. Henry R. Mason, MPH, Research Associate, Center for Health Services Research and Development, American Medical Association, 535 N. Dearborn, Chicago, IL 60610.

A survey of all living graduates from U.S. medical schools in 1960 to determine their home state in 1975 in relation to state where they went to medical school and state where they took their residency training.

Financing Organization: Supported by American Medical Association.

Current Status of Research: AMA's Center for Health Services Research and Development has ongoing research on provision of medical services in rural communities. No timetable for findings.

Availability of Findings: Journal of American Medical Association, July 7, 1975.

DISTRIBUTION OF HEALTH PERSONNEL--AN ANNOTATED BIBLIOGRAPHY, Ellen Sax, Barbara Unterman, National Health Council, 1740 Broadway, New York, NY 10019.

Objective--list and annotate references pertaining to the distribution of health personnel, factors influencing location of practitioners, and incentive programs designed to influence health professionals to practice in underserved areas.

Booklet divided into 2 sections--(1) state by state listing of references pertaining to a specific state or geographic area, and (2) general listing of sources relating to a particular field, such as dentistry or medicine, or a specific subject, such as physician distribution.

Financing Organization: Bureau of Health Manpower Contract to National Health Council.

Current Status of Research: Completed and published, June 1976.

Availability of Findings: Booklet available from National Health Council.

POLICIES TO INFLUENCE THE SPATIAL DISTRIBUTION OF PHYSICIANS: A CONCEPTUAL REVIEW OF SELECTED PROGRAMS AND EMPIRICAL EVIDENCE, Barry S. Eisenberg and James R. Cantwell, Center for Research and Development, American Medical Association, 535 N. Dearborn, Chicago, 60601.

To increase the usefulness of existing physician location literature for policy evaluation, literature is grouped into intraurban and urban-rural studies. A conceptual overview of physician location is presented. Consensus results, if any, are discussed. A list of hypotheses suggested by the literature is then utilized in a discussion of economic, social prior exposure and professional development incentives embodied in selected public and private sector programs. Programs are evaluated by type of incentive mechanism and geographic target area to determine if present program structures are based on a solid empirical foundation. This assessment indicates that, in general, use of prevalent location incentive mechanisms is not justified by a consensus of empirical evidence.

Financing Organization: The Robert Wood Johnson Foundation.

Current Status of Research: Published in Medical Care 14 (June 1976).

Availability of Findings: Reprints available from authors.

EFFECTIVENESS OF STUDENT AID PROGRAMS TIED TO A SERVICE COMMITMENT, Henry R. Mason, MPH, Research Associate, Center for Health Services Research and Development, American Medical Association, 535 N. Dearborn, Chicago, IL 60610.

Study of the effectiveness of 22 state scholarship and loan programs for medical students involving commitment to practice in shortage area in return for financial assistance. Successes and failures of various loan forgiveness programs discussed with suggestions of ways to increase effectiveness.

Financing Organization: Supported by American Medical Association.

Current Status of Research: AMA's Center for Health Services Research and Development has ongoing research on provision of medical services in rural communities. No timetable for reporting of findings.

Availability of Findings: Journal of Medical Education, July 1971.

REVIEW OF INCENTIVE PROGRAMS PROMOTING PRACTICE IN UNDERSERVED AREAS, Ellen Sax, National Health Council, 1740 Broadway, New York, NY 10019.

Objective: Describe and critically analyze incentive programs which appear to be promising as answers to the distribution problem. Twenty programs examined which have had some success in motivating health personnel to practice in underserved areas. Categories of programs include: financial incentives, preceptorships, special courses in health professional schools, federal programs, placement services, and innovative delivery systems. Data gathered from project directors. An attempt has been made in the "Comments" section following each example to emphasize particular elements in each program which contribute to its success.

Financing Organization: Bureau of Health Manpower Contract to National Health Council.

Current Status of Research: Completed and published February 1976.

Availability of Findings: Publication available from National Health Council.

A RIGHT TO HEALTH: THE PROBLEM OF ACCESS TO PRIMARY MEDICAL CARE, Charles E. Lewis, Rashi Fein, and David Mechanic, Center for Health Sciences, University of California, Los Angeles, CA 90024.

Our research on access to primary medical care resulted in a book which presents the viewpoints of a physician, an economist, and a practicing sociologist on major problems affecting the American public's access to care. It offers a collection of data available for an evaluation of a variety of programs. In the initial section Mechanic reviews difficulties related to provision of health services and suggests a conceptual framework in which the reader can evaluate attempts to improve access to primary medical care. Part II, by Charles Lewis, M.D. examines 11 programs initiated by government and other groups to improve access. The origins of legislation and their natural histories are described. In Part III, Rashi Fein draws upon the book's preceding discussions in suggesting policy options for accomplishing increased access to primary care in this country.

Financing Organization: The Robert Wood Johnson Foundation.

Current Status of Research: Completed.

Availability of Findings: Published in Health, Medicine and Society: A Wiley-Interscience Series, John Wiley and Sons: New York, 1976.

HEALTH MANPOWER INTERNATIONAL STUDY: FUNCTIONS, EDUCATION, AND REGULATION, Milton I. Roemer and Ruth Roemer, School of Public Health, University of California, Los Angeles, CA 90024.

Analysis of health manpower policies is being made in 5 countries: Australia, Belgium, Canada, Norway, and Poland through field visits to each, interviews with key officials (in government, educational institutions, health facilities, professional associations, etc.) and study of published or processed documents. The countries were selected to represent different patterns of national health care financing and organization, and their effects on health manpower supply, functions, training, and regulation. Among other things, special note has been taken of strategies used to improve the distribution of doctors and other health personnel in rural areas, and the apparent effectiveness of those methods.

Financing Organization: Research contract from U.S. Bureau of Health Manpower (1973-77).

Current Status: Monographs completed on Australia (published), Canada (in press), Belgium and Norway (awaiting publication); Poland data being analyzed.

Availability of Findings: U.S. Bureau of Health Manpower, National Institutes of Health, Bethesda, Maryland 20014.

FACTORS INFLUENCING WHETHER OR NOT NATIONAL HEALTH SERVICE CORPS' (NHSC) PHYSICIANS REMAIN IN THEIR ASSIGNED COMMUNITIES, John Gerweck and Sam Cordes, Department of Agricultural Economics, Penn State University, University Park, PA 16802.

The objective of this study is to isolate and determine the relative importance of those factors influencing whether or not NHSC physicians remain in their assigned communities beyond the two-year obligatory period. Physicians placed in communities in 1972, 1973 and 1974 have been surveyed to determine how long they stayed in their assigned communities. Explanatory variables generated from this survey focus on the physician's personal and professional background, motivation for joining the NHSC, and view of the community to which he or she was assigned. Explanatory variables from secondary sources which are included in the analysis focus on the community's economic condition, degree of professional isolation, and quantity and quality of recreational and cultural amenities and public services. Multivariate statistical techniques are being used to analyze the data.

Financing Organization: The Pennsylvania State University's Agricultural Experiment Station.

Current Status of Research: Analysis of data has just begun.

Availability of Findings: Summer 1977, from principal researchers.

STUDIES AND SYSTEM DEVELOPMENT IN HEALTH MANPOWER PLACEMENT AND DISTRIBUTION, David O. Born, Health Sciences Placement Service, Division of Health Ecology, School of Dentistry, University of Minnesota, Minneapolis, MN 55455.

Since 1972 the Division of Health Ecology has been engaged in a number of manpower studies and development activities, most of which have involved the application of computer technology to problems of health manpower placement. One system, developed for dentistry in Minnesota, has been expanded to eight other professional fields. An eleven state regional system for dentistry is currently under development.

A number of published articles and other reports are available on these programs. Papers on dental manpower shortage area determination are also available upon request.

Future research into the effectiveness of the system, particularly with respect to impacts on underserved areas is planned.

Financing Organization: Financing has been from the federal government and the University of Minnesota.

Current Status: Various projects in various stages. Queries are invited.

Availability of Findings: Some presently available, others to be published in future.

PATIENT ACCEPTANCE OF MEDICAL STUDENTS AS PRIMARY CARE PROVIDERS IN RURAL AMBULATORY CARE UNITS, Joel B. Cowen, John Riedel, & Dennis A. Frate, Office for Community Health Research, Rockford School of Medicine, University of Illinois, Rockford, IL 61101.

This study evaluates patient acceptance of students as primary care physicians in rural Community Health Centers (CHC). Students spend 25% of curricular time in a CHC over a 3-year period. Patient acceptance of student involvement is critical to the success of the program and has been evaluated in this study.

A total of 2,650 questionnaires were mailed to Health Center users with 1,500 (57.0%) returned. To the question, "How do you feel about having student physicians involved in your medical care in addition to the regular physician?", the following responses were obtained:

Attitude Toward Student	Percent
Definitely dislike	3.8%
Probably prefer not seeing	11.4%
Doesn't make a difference	44.1%
Prefer student at times	29.0%
Definitely prefer student	11.7%

The results indicate more patients were neutral-to-positive toward student involvement. Reactions to other questions indicated a high level of satisfaction with actual care received. As a model of primary care education, the Community Health Center System appears viable in terms of patient acceptance.

Financing Organization: Rockford School of Medicine, University of Illinois.

Current Status of Research: Completed.

Availability of Findings: Research published as "Student Involvement in Health Care: The Patient's Perspective", The Hospital Medical Staff, June 1976.

DIRECTORY OF PRECEPTORSHIP PROGRAMS IN THE HEALTH PROFESSIONS, Ellen Sax, National Health Council, 1740 Broadway, New York, NY 10019.

Objective: Develop a reference guide for health professional students who want to take a clinical elective in a rural or inner city location outside the state in which they are studying and for faculty who want to begin or expand a preceptorship program at their institution.

Directory identifies 243 preceptorship programs at health professional schools nationwide. Includes brief description of site (rural, inner city, solo or group practice, neighborhood health center, etc.); name and address of sponsoring school or organization; length of assignment; availability of stipends, transportation, or lodging; and whether program is open to students from other institutions. Directory is divided into 2 main sections--programs open to students from other institutions, and programs closed or limited to those enrolled at the sponsoring university. Of the 243 programs listed, 108 are open and 135 closed. Data gathered from schools of dentistry, medicine, nursing (baccalaureate programs only) optometry, osteopathic medicine, pharmacy, podiatry and public health.

Financing Organization: Bureau of Health Manpower Contract to National Health Council.

Current Status of Research: Directory published in August 1975. Updated edition in progress.

Availability of Findings: New edition, Summer 1977, from National Health Council.

WAMI, A REGIONAL MEDICAL EDUCATION PROGRAM OF THE UNIVERSITY OF WASHINGTON SCHOOL OF MEDICINE, Director: M. Roy Schwarz, M.D., Associate Dean of Academic Affairs, University of Washington School of Medicine, Seattle, Washington 98195.

Major objectives include: increase number of students admitted to medical school from the WAMI states--Washington, Alaska, Montana, and Idaho; increase the number of primary care physicians trained; bring the resources of the University of Washington School of Medicine medical center to communities in the WAMI states which lack these resources; redress the geographic maldistribution of doctors; accomplish programmatic goals without capital expenditures. First year of medical school is decentralized into 14 Community Clinical Units where physicians in private practice serve as clinical instructors to medical students and residents; continuing medical education opportunities are provided at WAMI sites; University of Washington School of Medicine faculty visit WAMI universities and WAMI clinical training sites to provide supplementary instruction, help coordinate instructional offering among all sites and offer onsite consultation and training to WAMI physicians and instructors; additional preceptorships and training is offered WAMI professors and physician participants at University of Washington School of Medicine.

Financing Organization: Combination of fund from Commonwealth Fund, Health Resources Administration and the four state legislatures.

Availability of Findings: Jerry Heyduk, Region X, DHEW, Seattle, WA.

ADMISSIONS AND THE RECRUITMENT OF MINORITIES TO THE UNIVERSITY OF WASHINGTON SCHOOL OF MEDICINE: Project Director: Zenaido Camacho, Ph.D., Assistant Dean for Student Affairs and Guy Anderson, Ph.D., University of Idaho; Principal Investigator: M. Roy Schwarz, M.D., Associate Dean for Academic Affairs, and Director of WAMI Program, University of Washing on School of Medicine, Seattle, Washington 98195.

The major objectives of this experiment are to make the admissions process more efficient from the view-point of the student, the Admissions Committee and the premedical advisors and to increase the number of minority students from the WAMI states in professional health education programs. In the experiment applicants will be interviewed via interactive television and interactive conferences held of admissions committees between the University of Washington School of Medicine and the WAMI universities or Community Clinical Units. Interactive television presentations will be made between high school and college minority students, their families and advisors and minority representatives from Seattle area health professions.

Financing Organization: Health Resources Administration, DHEW.

Current Status of Research: Now operating under a planning grant; experiment scheduled to begin June 1, 1977.

Availability of Findings: Summer, 1978, Office of Research in Medical Education, University of Washington School of Medicine.

REGIONAL SHARING OF FACULTY AND RESOURCES: Project Director, Gary Striker, M.D., Darrel Williams, Ph.D. Principal Investigator: M. Roy Schwarz, M.D., Associate Dean of Academic Affairs and Director, WAMI Program, University of Washington School of Medicine, Seattle, Washington.

The major purpose of the experiment is to determine the extent to which satellite communication can be used to provide a first-year academic program at four neighboring state universities which meets accreditation and University of Washington School of Medicine academic standards and which utilizes regional faculty resources and facilities. Interactive satellite presentations of entire courses will be made by UWSM faculty to first-year medical classes at University of Alaska and Montana State University.

Financing Organization: Health Resources Administration, DHEW.

Current Status of Research: Now operating on a planning grant; experiment scheduled to begin June 1, 1977.

Availability of Findings: Summer, 1978, Office of Research in Medical Education, University of Washington School of Medicine.

UTILIZATION OF THE CONSULTATION PROCESS AS AN EDUCATIONAL RESEARCH ACTIVITY: Project Director: Ronald J. Lemire, M.D., Associate Dean of WAMI Program, Clinical Phase; Principal Investigator: M. Roy Schwarz, M.D., Associate Dean of Academic Affairs, Director of WAMI Program, University of Washington School of Medicine. Seattle, Washington 98195.

The purpose of this experiment is to utilize the consultation process as an educational research activity. Patients will be presented by referring physicians at WAMI Community Clinical Unit sites via interactive satellite communication to consulting physicians at University of Washington, assisted by medical students and residents in training at the Community Clinical Units and including appropriate additional professionals.

Financing Organization: Health Resources Administration, DHEW.

Current Status of Research: Operating on a planning grant; experiment scheduled to begin June 1, 1977.

Availability of Findings: Summer, 1978, Office of Research in Medical Education, University of Washington School of Medicine.

INDEPENDENT LEARNING PROGRAM: Project Director: Robert C. Davidson, M.D., WAMI Associate Director for Continuing Medical Education; Principal Investigator: M. Roy Schwarz. M.D., Associate Dean of Academic Affairs and Director of WAMI Program, University of Washington School of Medicine, Seattle, Washington 98195.

The major purpose of this experiment is to evaluate the acceptability and effectiveness of two-way interactive satellite communication in an independent learning experiment in continuing medical education. The experiment will use both group and solo learning programs for physicians in their own communities using a variety of formats some with and some without interactive satellite reinforcement.

Financing Organization: Health Resources Administration, DHEW.

Current Status of Research: Now operating on a planning grant; experiment scheduled to begin June 1, 1977.

Availability of Findings: Summer, 1978, Office of Research in Medical Education, University of Washington School of Medicine.

SECTION V: Health Care Planning and Policy

A PROFILE OF U.S. COMPREHENSIVE HEALTH PLANNING AREAS, Jeannette Fitzwilliams. Economic Development Division, Economic Research Service, USDA. AER Report No. 339, June 1976, Washington, DC 20250.

This is the basic, first report in a series on factors affecting rural health within the framework of comprehensive health planning. This deals with CHP areas as the states expected them to develop, May 1973. The CHPs are summarized by agency type, formation status, source of planning funds, area type, congruence with substate planning and development districts. They are characterized as to land area, population--total, urbanized area, rural, minority--3 age groups, aggregate income, percent poor, births, infant mortality, housing that is crowded, lacking in plumbing or ready access to a phone. Two types of tables are presented by region and area type (degree rural): averages, number of CHPs with wide deviations from mean. Regions IV, VI and III usually show most potential problems and averages become more adverse as size of largest city in CHP declines. Data is from 1970 census or vital statistics 1966-68.

Financing Organization: Economic Research Service, USDA.

Current Status of Research: Published.

Availability of Findings: From NTIS, accession number still unknown but identify by title and AER No. 339.

SUPPLEMENTAL DATA: CHARACTERISTICS AND COUNTY COMPOSITION OF CHP AREAS--REGIONS II, III, AND V; REGION IV; REGIONS VI, IX, X; AND REGION VII AND VIII, Jeannette Fitzwilliams, Economic Research Service, USDA. Supplements to AER No. 339, June, 1976, Washington, DC 20250.

This is a supplement to the Profile and gives the detailed information for component counties, CHP areas, and CHP States (some CHPs crossed state lines and were assigned to state where the office was located) for each of the socioeconomic variables. It gives the CHP organizational codes. Footnotes indicate transition of CHP area to Health Service Areas (P.L. 93-641), update formation status and boundaries to CHP status just prior to new law, explain most differences between CHP and substate planning district boundaries.

Financing Organization: Economic Research Service, USDA.

Current Status of Research: Published.

Availability of Findings: From NTIS, accession number still unknown but identify by title and as supplement to AER No. 339.

CHANGING GROWTH PATTERNS OF HEALTH PLANNING AREAS 1970-72 v. 1960-70, Jeannette Fitzwilliams, Economic Development Division, Economic Research Service, USDA, Washington, DC 20250.

This report analyzes the rate of growth (compounded annually) of Comprehensive Planning (CHP) areas in the 2 periods. Growth rate levels, growth patterns--turning up, accelerating rise, decelerating rise, turning down and continued decline--and the relation of growth to 1970 census health personnel data are discussed both for the study area (U.S. excluding New England and Alaska) and in detail by region and area type. This report builds on data presented in earlier reports and introduces two new area types: 1) based on number and percentage of rural residents in CHP as defined by Census and 2) percentage urbanized area population. CHP areas are defined as those expected by the states in May 1973 to eventually develop. They, thus, do not always coinside with 314(b) agencies. For the period 1960-70 109 of the 416 CHPs showed a loss and only 90 had a growth rate of 1.5 or over. For 1970-72 the figures were 43 and 182. This great reversal occurred despite fact growth rate was nearly the same for both periods. Maps showing the growth patterns together with an overlay showing land within a 50 mile radius of the center of urbanized areas of 100,000 or more are provided. This will be last report based on CHPs; future reports will be based on new HSAs.

Financing Organization: ERS, USDA

Current Status of Research: Being prepared for clearance prior to publication.

Availability of Findings: Summer 1977, from researcher.

A PROFILE OF HEALTH SERVICE AREAS, Jeannette Fitzwilliams, Economic Development Division, Economic Research Service, USDA, Washington, DC 20250.

This report will reproduce the same socioeconomic data as used in the CHP profile (AER No. 339) but organized by HSAs. The same study area is used--U.S. excluding New England and Alaska--giving 189 HSAs as compared to 416 CHPs--"funded", developing, and undeveloped. Regional comparisons can be made of the effect of changing the boundaries of the planning areas. The old area type code is no longer applicable but one that embodies much the same idea has been developed. It is also expected that a proximity code based on share of HSA in 50-mile radius of the center of an urbanized area of 100,000 or more will be used. Several other ways of defining area type are being experimented with in an attempt to highlight uniquely rural situations. Report will consist mostly of tables and text will probably be devoted to helping reader assess effects of transition from CHPs to HSAs. Data from 1st and 4th count Census tapes, Census population tapes for 1972, 1973 and vital statistics for births and infant deaths, 1966-68.

Financing Organization: Economic Research Service, USDA.

Current Status of Research: Most of data has been retrieved and is being posted to tables and reviewed prior to writing report.

Availability of Findings: Hope to have first draft ready by March but publication probably not till late 1977. A limited number of copies of draft for review will be available from researcher.

WORKING PAPER: A MEANINGFUL DEFINITION OF RURAL IN RELATION OF HEALTH PROBLEMS, Jeannette Fitzwilliams, Economic Development Division, Economic Research Service, USDA, Washington, DC 20250.

The two most popular classifications of rural for purposes of tabular analysis use 1) the census definition of rural--all outside places of 2,500 or 2) the SMSA/nonSMSA = Metropolitan/nonMetropolitan = Urban/Rural. Neither one is much use in really describing rural people and rural problems with a view to their solution. In the context of today's problems, technology and life styles a cutoff at 2,500 is meaningless. But 38 percent of the rural population (census definition) live in SMSA counties and somewhat over 30 of those counties are 100 percent rural. Operational agencies are using larger sized communities as the cutoff. The whole matter badly needs to be reviewed both in terms of policy implications of alternative solutions and what is feasible statistically.

Financing Organization: Economic Research Service, USDA.

Current Status of Research: Extensive coding has been done and some data retrieved. Work is proceeding in conjunction with the HSA profile because the definition of rural is in relation to health planning and health problems in general.

Availability of Findings: Because this is intended to serve as the basis for discussion and, I hope, action by Census in providing data from 1980 Census and by HEW and others in implementing already enacted legislation or proposing new legislation, the draft will be available for review on the understanding that it is a draft only. Target date is March 1977, from principal researcher.

CRITICAL HEALTH MANPOWER SHORTAGE AREAS: THEIR IMPACT ON RURAL HEALTH PLANNING, Jeannette Fitzwilliams, Economic Development Division, Economic Research Service, USDA, Washington, DC 20250.

This report describes the 667 Critical Health Manpower Shortage Areas-Medical (CHMSAs) listed in the Feb. 25, 1975 Federal Register and within the study area in terms of the Comprehensive Health Planning (CHP) areas in which they are located. The characteristics used in the analysis are those contained in the Profile (AER No. 339) of CHP areas plus health personnel data from the 1970 Census. 269 of the 416 CHPs had one or more CHMSAs. In 99 the CHMSAs covered over 1/3 of the CHP

land area. Only 24 included an urbanized area. 63 percent of the CHPs containing an SMSA also had a CHMSA; 66 percent of those without an SMSA had one or more. In 112 CHPs all CHMSAs were outside a circle of 50 mile radius drawn around the center of SMSA cities of 100,000 or more. Crude tests were unable to find many potential CHMSAs that had not been designated but did indicate criteria possibly should be changed for medical service areas with large land areas but small populations. CHMSA designation entitled area to apply for National Health Service Corps personnel. The relation of HEW's Rural Health Initiative program to the Corps and to the new Health Service Areas (P.L. 93-641) is explained.

Financing Organization: Economic Research Service, USDA.

Current Status of Research: Report at printers.

Availability of Findings: Spring 1977 from principal researcher.

THE INDEX OF MEDICAL UNDERSERVICE: COMPUTATIONS, THEORETICAL FOUNDATIONS, AND EVALUATION, John Kushman and Carole Nuckton, Department of Agricultural Economics, University of California, at Davis, Davis, CA 95616.

The history and theoretical foundations of the index of medical underservice as used in the HMO program are discussed. The index is computed at the county and subcounty levels for Northern California outside the San Francisco Bay area. The index is evaluated for its ability to reflect the population's ability to obtain physicians' services.

It is shown that the index of medical underservice understates the disadvantages of persons who are rural or nonwhite in obtaining physicians' services. A substitute index is computed by combining the index of medical underservice with objective data on physician utilization from the Medicaid program.

Financing Organization: California Agricultural Experiment Station.

Current Status of Research: Project completed.

Availability of Findings: John Kushman "The Index of Medical Underservice as a Predictor of Ability to Obtain Physicians' Services." Forthcoming, American Journal of Agricultural Economics, Feb. 1977.

Carole Nuckton and John Kushman, The Index of Medical Underservice: Historical Background, Theoretical Foundations, and Computations for Northern California, Forthcoming, Giannini Foundation Information Series, 1977.

CORRELATION BETWEEN PROFESSIONAL MEASURES AND CONSUMERS' PERCEPTIONS OF THE ADEQUACY OF COMMUNITY MEDICAL SERVICES, Mary C. Ahearn and Sam Cordes, Department of Agricultural Economics, Penn State University, University Park, PA 16802.

The objective of this study is to determine the degree of correlation between professional measures and consumers' perceptions of the adequacy of community medical services. Data have been gathered for approximately 200 counties. One set of data is the professional measures of adequacy of medical services in each county, e.g., physician-population ratios and HEW's Index of Medical Underservice. The other set of data is primary data from a sample of persons living in each of the counties included in the study. This data set includes responses to such questions as "How satisfied are you with the medical care in your community?" Basic social and economic data for each person included in the sample has also been included and will be used as control variables. Multivariate statistical techniques will be used in the data analysis.

Financing Organization: The Pennsylvania State University's Agricultural Experiment Station.

Current Status of Research: Analysis of data will soon begin.

Availability of Findings: Late 1977, from Sam Cordes.

THE ECONOMIC DRAIN OF TOWNS NOT HAVING EASILY ACCESSIBLE MEDICAL CARE: A COMMUNITY ANALYSIS, Joel B. Cowen, and Dennis A. Frate, Office for Community Health Research, Rockford School of Medicine, University of Illinois, Rockford, IL 61101.

This empirical study examines the direct economic consequences of being medically underserved for one rural Illinois community. Present patterns of physician distribution cause many families to leave their local area to seek medical care with a resultant economic drain in terms of travel expenditures & time consumed. A program developed and operated by the Rockford School of Medicine has not only resulted in the increased availability of medical care in underserved areas but has also resulted in major savings to the individuals and families participating in the program. One year after the introduction of a Community Health Center, a mailed questionnaire was administered to all households to determine their previous location of medical care and the number of patient encounters during the past year. Based on these data, travel costs, and time expended were calculated. Results from 538 households indicate the average family saved $51 and 10.0 hours per year by utilizing the local health center. On a community level over $68,000 and 13,500 hours were saved. Such analysis provides an empirical model for determining the actual costs of not having available local medical care.

Financing Organization: Rockford School of Medicine, University of Illinois.

Current Status: Completed.

Availability of Findings: Available.

LOCATIONAL ASPECTS OF HEALTH CARE SERVICES IN NEVADA, S. W. Pulkkinen, H. D. Radtke, and C. T. K. Ching, Division of Agricultural and Resource Economics, University of Nevada - Reno, Reno, NV 89557.

The vast distances and low population densities, coupled with lower real incomes for rural residents, create difficulties in solving the rural health problem. This paper identifies economic and geographic considerations which must be included in any analysis of health services for rural areas.

The major conclusion of this study is that Nevada's rural areas lack the ability to support a "high level" of health services. Typically, these areas have neither the financial, nor the population base to support an adequate level of health services. Further, when these services do exist in rural areas, not all residents of the area use these services. Low use rates, for whatever reason, compound the problem since the lower the use rate, the larger the population base required to support health services. This suggests that the only way rural areas can have adequate health services is through subsidies by either county, state or federal governments.

Financing Organization: Department of Agricultural Economics, UNR.

Current Status of Research: Completed July 1976.

Availability of Findings: Experiment Station Bulletin B39.

A MATHEMATICAL MODEL FOR ANALYSIS OF RURAL HEALTH CARE SYSTEMS, Gerald Doeksen, Jim Dunn, and Bernal Green, EDD, ERS, USDA, Department of Agricultural Economics, Oklahoma State University, Stillwater, OK 74074.

The objectives of this study is to model the health care services of a health services area. The mathematical model will consist of a mixed interger linear programming model which incorporates multiple goals or objectives. Some objectives include (1) to derive minimum costs of providing a given level of health service and (2) to derive optimum configuration to maximize accessibility. The model will be such that health planners can easily apply it to other health service areas. It will assist in answering such questions as (1) where is the minimum cost location of another hospital or clinic, (2) where is minimum cost of hospital expansion and (3) where are future health service needs greatest in future years.

Financing Organization: EDD, ERS, USDA and Department of Agricultural Economics.

Current Status of Research: Model is written and presently being tested.

Availability of Findings: December 1977.

A MODEL FOR ESTIMATING HOSPITAL USAGE IN ARKANSAS BY PLANNING AND DEVELOPMENT DISTRICT, Mary Jo Grinstead, Rachel Doyle, John F. McCoy, and Gernal L. Green, Department of Agricultural Economics and Rural Sociology, University of Arkansas, Fayetteville, AR 72701 and Arkansas Health Statistics Center, Little Rock, AR.

The objectives of this study were (1) to determine if length of hospital stay was related to selected socioeconomic variables; and (2) to compare estimated overall needs for hospital beds in 1980 for the State and its districts with the number of hospital beds available in 1973. Least-squares multiple regression showed that the factors most highly associated with length of hospital stay were age and sex, with age as a predictor 5 times better than any other single variable. A model for explaining hospital demand was developed and used to estimate the number of hospital beds that would be needed to meet the future needs of the State. Analysis showed that the State and 6 of the 8 sub-state Districts had ample hospital beds to meet 1980 anticipated demands.

Financing Organization: EDD, ERS, USDA, and University of Arkansas Agricultural Experiment Station, Fayetteville.

Current Status of Research: Published.

Availability of Findings: Arkansas Experiment Station Bul. 809, Aug., 1976. Fayetteville, AR 72701.

RESPONSE TIME AND THE LOCATION OF EMERGENCY MEDICAL FACILITIES - A CASE STUDY OF THE DELIVERY OF EMERGENCY MEDICAL SERVICE TO RURAL AREAS, S. G. Daberkow and C. A. King, Economic Research Service, EDD, U.S. Dept. of Agriculture, Washington, DC 20250.

The objective of the above study was to determine the most efficient (least-cost) size, number and location of emergency medical facilities in a rural area.

Annual demand and peak-month demand for emergency medical services was estimated from past utilization of ambulance services in the study area--Northern California. The model incorporates response time and service time constraints into the analysis and indicates the trade-off between total regional costs and selected time standards. The financial feasibility of individual facilities are then analyzed. Alternative

financing schemes are proposed for facilities where demand is insufficient to cover fixed and variable costs. Large response and service times and/or volunteer emergency medical facilities are common characteristics for remote and/or small communities which cannot afford a rapid response and service time, however, if all residents are to be served within a given area within a given time, the costs may be prohibitive. The market system currently distributes privately-owned, for profit emergency medical facilities to larger urban areas with concentrated populations. Smaller, more remote populations are left with lower quality, primarily volunteer facilities.

Financing Organization: Economic Development Division, ERS, Washington, DC.

Current Status of Research: Article submitted for publication in AJAE.

Availability of Findings: Ph.D. Dissertation completed at University of California at Davis, 1976.

PUBLIC POLICY OF RURAL HEALTH, Bert E. Swanson and Edith Swanson, Department of Political Science, University of Florida, Gainesville, FL 32611.

This study is an effort to conceptualize the factors influencing American health care policy. It develops a policy map on how it is organized, who governs and who pays for what type of health care. It formulates a series of findings on the health condition--status, utilization and resources (SUR)--as well as the social, economic and political (SEP) policy context of rural health at the community, county, state, regional and national level. It establishes a paradigm for linking the linkages between the SUR and the SEP and a strategy for improving rural health care.

Financing Organization: National Center for Health Services Research, Public Health Service, Rockville, Maryland.

Current Status of Research: Completed.

Availability of Findings: Summer 1976, Rural Health Services (North Central Regional Center for Rural Development, Iowa State University Press).

SATELLITE COMMUNICATION IN THE LEGISLATIVE PROCESS. Project Director: John H. Lein, M.D., Associate Dean for Continuing Medical Education, University of Washington School of Medicine, Seattle, Washington 98195. Principal Investigator: M. Roy Schwarz, M.D., Associate Dean of Academic Affairs, Director of WAMI Program, University of Washington School of Medicine, Seattle, 98195.

The purpose of this study is to assess the feasibility of using two-way interactive audio and video communication to facilitate interaction among individuals and groups concerned with health care issues who are involved in the legislative process. The major technique used will be interactive satellite transmission of formal and informal legislative hearings and an interstate governors conference on health care and health education issues.

Financing Organization: Health Resources Administration, DHEW.

Current Status of Research: Now operating on a planning grant; experiment scheduled to begin June 1, 1977.

Availability of Findings: Summer, 1978, Office of Research in Medical Education, University of Washington School of Medicine.

GUIDELINES FOR RURAL AND COMMUNITY DEVELOPMENT IN ECONOMIC REGIONS OF MINNESOTA, Robert A. Hoppe, Department of Agricultural and Applied Economics, University of Minnesota, St. Paul, MN.

Define a region's resource base and identify major problems. Approach: the first stage is a descriptive analysis and problem identification using secondary data. In this stage, health care problems were examined, as well as other problems. The second stage is the completion of an input-output model to help examine solutions to problems.

Financing Organization: Agricultural Experiment Station, University of Minnesota.

Current Status of Research: I-O model transactions table being put together.

Availability of Findings: Summer 1978.

GOOD HEALTH: EVERYONE'S CONCERN, Mary Osgood, Department of Agricultural Economics and Rural Sociology, Penn State University, University Park, PA 16802.

The objective of this research was to determine and describe health behaviors and attitudes among persons in a 3-county rural development program region in Western Pennsylvania. Regular doctor and dental visits and regular personal health habits were practiced by approximately two-thirds of the respondents. Availability of doctors was found to be a top-priority problem, especially in Indiana County. Over three-fourths of the respondents in all three counties said they would use physician extenders if available.

This study is also reported in the Rural Health Staff Papers of the department as Paper #12.

Financing Organization: Title V, Rural Development Act of 1972.

Current Status of Research: Completed.

Availability of Findings: Available from the author (Rural Development Newsletter, Volume 1, Number 3, Spring 1976).

ATTITUDES TOWARD NURSING HOMES AND OTHER FACILITIES FOR MEETING HEALTH CARE NEEDS AFTER RETIREMENT: SCOTT COUNTY AND FORT SMITH, ARKANSAS, Alan May, Jane Fitzgerald, Suki Hinman, Carolyn Stark, Bernal Green, and Mary Jo Grinstead, Dept. of Agricultural Economics and Rural Sociology, University of Arkansas, Fayetteville, AR 72701.

This study tapped attitudes of 200 Arkansans (aged 55-65) toward nursing homes. Respondents wanted to remain independent and maintain their own homes as long as possible, even if this meant some risk to their lives. None of the respondents planned to retire to a nursing home. 3 important services which respondents felt should be available at a nursing home were expert medical care, physical therapy, and crafts. Lack of privacy and loss of feelings of ownership were felt to be problems associated with nursing home living.

Financing Organization: EDD, ERS, USDA, and University of Arkansas Agricultural Experiment Station, Fayetteville.

Current Status of Research: Published.

Availability of Findings: Arkansas Experiment Station Bul. 800, June 1975. Fayetteville, AR 72701.

SECTION VI: Health Status, Self-Care, and Health Education

SOCIAL FACTORS IN THE HEALTH OF OLDER RURAL PERSONS, E. Grant Youmans, Department of Sociology, University of Kentucky, Lexington, KY 40506.

The aim of this study is to identify social factors in the health status of older persons living in a rural area of Kentucky. In 1975, information was collected by means of personal interviews with 399 men and women who comprised an area probability sample of persons aged 60 and over in a rural county. Data were collected on self-ratings of health, health ailments, health aids used, difficulties in obtaining health services, interest in special facility for older persons, social activities, living arrangements, housing conditions, transportation problems, and income and assets.

Financial Organization: Economic Development Division, Economic Research Service, U.S. Department of Agriculture and the Kentucky Agricultural Experiment Station.

Current Status of Research: Analysis of data and report writing in process.

Availability of Findings: Summer 1977, from principal investigators.

RESIDENTIAL DIFFERENCES IN HEALTH STATUS OF THE LOW INCOME ELDERLY POPULATION, 1973, John L. McCoy, Office of Research and Statistics, Social Security Administration and David L. Brown, Economic Research Service, U.S. Department of Agriculture.

This study investigates residential differences in the health status of the low income elderly population. Data are from a national survey of persons potentially eligible for participation in the Supplemental Security Income Program (SSI). Respondent were also separated according to welfare recipiency status. This data file includes a wide variety of demographic, socioeconomic, and health information. Access to essential services was also ascertained. Our initial analysis investigates the hypothesis that low income elderly persons in rural areas do not suffer from poorer health than their urban counter parts when age, sex, race and other variables that are associated with both health and residence are controlled. Parallel analyses are carried on within the welfare and non-welfare populations.

Financing Organization: Social security Administration.

Current Status of Research: First draft of one paper nearing completion. Second paper focusing on access to essential services contemplated for future.

Availability of Findings: Spring 1977, from principal researchers.

PROBLEMS AND ADJUSTMENTS TO LOSS OF SPOUSE BY THE ELDERLY: FORT SMITH AND WALDRON, ARKANSAS, Ann Tippitt, Mary Jo Grinstead-Schneider, and Bernal L. Green, Dept. of Agricultural Economics and Rural Sociology, University of Arkansas, Fayetteville, AR 72701.

3 important life changes often accompany old age: retirement, widowhood, and institutionalization. All 3 involve considerable role adjustment and probable loss of social prestige. The purpose of this study was 2-fold: (1) to learn how the loss of spouse affected health status, meal planning, finances, and social adjustment for the survivor; (2) to assess the types of services and assistance which widowed persons have found useful. Meal planning and preparation was viewed as a problem for a majority of those interviewed. Common solutions were eating out and participating in a congregate meal program for the elderly. More than half of the sample had no children or siblings living within an hour's driving distance, and married friends were the major source of help and consolation for 83% of the respondents. Community services were important. 1/5 of the sample participated in congregate meal programs, 15% belonged to Senior Citizens' Club, 14% received food stamps and 7% made use of community mental health services. (200 persons over 60 years of age who had been widowed more than 6 months but not more than 2 years constituted the sample population for this study).

Financing Organization: EDD, ERS, USDA, and University of Arkansas Agricultural Experiment Station, Fayetteville.

Current Status of Research: manuscript completed.

Availability of Findings: from principal researchers.

AN EVALUATION OF CONGREGATE MEAL PROGRAMS AND HEALTH OF ELDERS: SCOTT COUNTY AND FORT SMITH, ARKANSAS, Alan May, Suki Hinman, Jane Fitzgerald, Mary Jo Grinstead, and Bernal L. Green, Dept. of Agricultural Economics and Rural Sociology, University of Arkansas, Fayetteville, AR 72701.

The study was an effort to evaluate the impact of a congregate meal program for the elderly in 2 areas in western Ark. Data from 200 respondents (100 participants and 100 nonparticipants) indicated that program participation is associated with reduced hospitalization. Participants were unanimous in their praise of the hot meals program, feeling that the food was good and that they were getting enough to eat. The social aspects were mentioned by 91% as the "part of the program I like best." Data from the study suggest that congregate meal programs offer an important avenue for reducing malnutrition and associated lengthy hospitalization among the elderly.

Financing Organization: EDD/ERS, USDA, and University of Arkansas Agricultural Experiment Station, Fayetteville.

Current Status of Research: Published.

Availability of Findings: Arkansas Experiment Station Bul. 808, Jy., 1976. Fayetteville, AR 72701.

INFANT MORTALITY IN ARKANSAS, 1970-73, Mary Joe Grinstead-Schneider, John F. McCoy, and Bernal L. Green, Dept. of Agricultural Economics and Rural Sociology, University of Arkansas, Fayetteville, AR 72701.

This study involved analysis of variations in rates of infant mortality (IMR) among the 8 Planning Districts in Arkansas, 1970-73. The analyses specifically addressed variations in District IMR in terms of per capita income, percentages below poverty, and availability of medical services.

Variations in IMR did not correlate closely with per capita income differences. Districts with relatively low proportions of poverty-level residents did not have levels of infant mortality consistently lower than state averages. Unfavorable primary care physician: population ratios had a positive association with high IMR. But degree of rurality, a rough measure of geographical access to medical care, had little bearing on infant mortality levels. Race was by far the most important variable in understanding IMR in Arkansas, with rates for Blacks consistently and substantially higher than those for Whites.

Financing Organization: EDD, ERS, USDA, and University of Arkansas Agricultural Experiment Station, Fayetteville.

Current Status of Research: manuscript completed.

Availability of Findings: from principle investigators.

MOTHERCRAFT AS RELATED TO INFANT HEALTH AND DEVELOPMENT, Doris P. Slesinger, Dept. of Rural Sociology, University of Wisconsin, Madison, WI 53706.

The purpose is to examine the effects of sociodemographic and sociocultural factors in "mothering" as related to the health and development of the child. The research plan is a prospective design, starting with infants of 3 months and following their development until they are 18 months old. A sample of 100 urban and 48 rural Wisconsin babies were selected. Mothers and babies were interviewed in their homes by public health nurses at three points: when infants were 3, 12 and 18 months. An Index of Mothercraft was developed to evaluate the quality of mothering.

Financing Organization: Institute for Research on Poverty, University of Wisconsin-Madison.

Current Status of Research: Field work completed, analysis in progress.

Papers presented on Mothercraft: The Relationship Between Social Ingegration and Preventive Medical Care in Poverty Families from Rural and Urban Areas: A Concept Examination.

The Concept of Mothercraft as Related to Infant Health in Urban and Rural Settings.

The Relationship of Wanting a Pregnancy to Subsequent Infant Care. A. Wright.

ECONOMIC DETERMINANTS OF INFANT MORTALITY: THE ROLE OF INCOME, EDUCATION, HEALTH RESOURCES, AND RURALITY, Kim Carney, Ph.D., Dept. of Economics, University of Texas at Arlington, Arlington, TX 76019.

The study examines the economic determinants of infant mortality, which is used here as a proxy for health status. The variables introduced are income, health resources, education, and the rural-urban character of the environment. According to various published measures it appears that the rural population of the U.S. has a lower health status than the urban population. The purpose of this study is to determine the existence of a rural-urban differential when other variables, especially income and health resources, are accounted for.

Cross-section data, namely Texas counties, are employed. With 254 counties, roughly divided between predominantly rural and predominantly urban counties, Texas is an ideal laboratory for such a study.

Financing Organization: The University of Texas at Arlington.

Current Status of Research: Research was begun in the autumn of 1976.

Availabiiity of Findings: Preliminary results should be available at the end of summer 1977 from the principal researcher.

A COMPREHENSIVE RURAL HEALTH CLINIC: CASE STUDY OF PUBLIC PROGRAM EVALUATION METHODOLOGY, A. Allan Schmid, Werner Keine and Gail Updegraff, Dept. of Agricultural Economics, Michigan State University, East Lansing, Michigan 48824.

The study developed a health performance indicator in terms of ability of persons to do their daily tasks (go to school, work, etc.) rather than simply health inputs (such as physical exam, operations, innoculations). The impact of a major increase in health services in a poor rural area was evaluated using a with and without quasi-experimental design and this was contrasted to other possible designs.

Financing Organization: Michigan Agricultural Experiment Station.

Current Status: Completed.

Availability of Findings: Published in M.S.U. Agricultural Economics Report Number 260, December 1973 and Kiene, "Social Services Utilization and Measures of Concentration," Journal of Economic Planning Services, 1975.

A SURVEY OF HEALTH AND THE HEALTH CARE UTILIZATION PATTERN OF A SMALL RURAL BLACK COMMUNITY. Martin Gordon and Gene Hartin, Urban Resources Center, Texas Southern University, 3201 Wheeler Avenue, Houston, Texas 77004.

The objectives of this study is to determine: (1) If the health statistical data collected by state and county health agencies actually reflect the health status of each individual rural community. (2) If the residents in the community fully utilize the health facilities adjacent to the communities. (3) What solid criteria can be used to measure health status.

Financing Organization: Contract under The Department of Health Education and Welfare Texas Regional Medical Program Inc.

AN ANALYSIS OF SELF-CARE PRACTICES IN RURAL POPULATIONS: THE EXTENT TO WHICH RURAL POPULATIONS IN COLORADO SELF-CARE, M. Gene Aldridge, Aldridge & Associates, Inc., International Health Planning, Education and Research, Box 542, Englewood, Colorado 80151.

This study is designed to utilize a formulative research strategy in analyzing data from random samples of rural communities in Colorado. The basic objective of the study is to assess the various self-care practices employed by rural populations in Colorado. Specific cost and benefit (economic) analysis will be applied to study results. In addition, demographic data, self-care behaviors and perceptions, and epidemiological analysis will be applied to the study of self-care practices.

Financing Organization: Funding sources currently being finalized.

Current Status of Research: Surveying to begin February 1977. Developmental work to be completed January 15, 1977.

Availability of Findings: January 1978 from Aldridge and Associates, Inc.

PREVENTIVE HEALTH EDUCATION NEEDS ASSESSMENT IN RURAL PENNSYLVANIA. Samuel M. Leadley, S. M. Cordes, C. O. Crawford, and M. H. Osgood, Dept. of Agricultural Economics and Rural Sociology. Penn State University, University Park, PA 16802.

The research objective was to determine preventive health behaviors, attitudes, beliefs and knowledge of rural Pa. residents. Adult males and

females were interviewed from samples of commercial farm populations (3 counties, N=325) samples of rural farm and non-farm residents (2 counties, N=218) and a probability sample of one total county adultspopulation (N=347). The interview questions were focused around heart disease and cancer.

Major findings were: (1) knowledge of seriousness of these diseases is uniformly high among rural respondents; (2) perceptions of susceptibility, are in general, at realistic levels; (3) nonfatalistic attitudes predominate regarding survival subsequent to contracting either heart disease or cancer; (4) respondents are aware of the so-called risk factors associated with heart disease; (5) hypertensive testing rates exceed those reported in the 1974 PHS hypertension survey; (6) exercise, weight control and dietary regulation were behavioral areas where one or more factors were active to inhibit adoption of preventive health activities; (7) knowledge of warning signals of cancer was lower among males than females; and (8) no statistically significant differences were found between the rural farm and rural nonfarm respondents on selected behavioral, knowledge, and attitude items.

Financing Organization: The Pennsylvania State University Agricultural Experiment Station and Rural Development Act of 1972 (Title V) grant.

Current Status of Research: Data collection is completed, analysis is partially completed, preliminary results have been reported to participating individuals and organizations interested in preventive health education.

Availability of Findings: S. M. Leadley, Rural Health Research, 204 Weaver Building, University Park, PA 16802.

THE "HEALTH BELIEF MODEL" APPLIED TO TWO PREVENTIVE HEALTH BEHAVIORS AMONG WOMEN FROM A RURAL PENNSYLVANIA COUNTY, Mary Hazen-Osgood, Dept. of Agricultural Economics and Rural Sociology, Penn State University, University Park, PA 16802.

The objective of this study was to examine the relationship between each of two health behaviors associated with the prevention of coronary heart disease-regulating diet and getting regular physical exercise-and the various socialpsychological, socioeconomic, and demographic aspects suggested in Rosenstock's Health Belief Model. Data which had been collected in household surveys were analyzed for 283 women in a rural county. The major conclusion was that the most important reason for not practicing these two health behaviors was their perceived difficulty. Health educators would find it useful to attempt to reduce this perceived difficulty.

Financing Organizations: Pennsylvania Department of Agriculture and The Pennsylvania State University's Agricultural Experiment Station.

Current Status of Research: Completed.

Availability of Findings: Available from Department of Agricultural Economics and Rural Sociology.

FOLLOW-UP BEHAVIOR OF HIGH RISK PARTICIPANTS IDENTIFIED IN A HEART DISEASE RISK FACTOR SCREENING PROGRAM. Charles O. Crawford, Department of Agricultural Economics & Rural Sociology, University Park, PA 16801 and George W. Schelzel, Pa. Dept. Health, Harrisburg, PA 17120.

The objectives of this study were to: (1) describe characteristics of persons identified as having higher risk to heart disease, (2) describe participants' reaction to program conduct and (3) ascertain follow up behavior of higher risk participant. Personal interviews were conducted with a sample of 496 higher risk participants in risk factor screening programs in south central Pennsylvania. Follow-up behavior is being examined using the "Health Belief Model."

Financing Organization: Pennsylvania Agricultural Experiment Station.

Current Status of Research: Report completed on first two objectives (Pa. AES Progress Report No. 246). Analysis for second objective underway.

Availability of Findings: Same as above.

PRIMARY DELIVERY OF PREVENTIVE DENTAL HEALTH CARE TO A RURAL POPULATION, I. I. Ship, DMD, MSc, & D. W. Cohen, DDS, University of Pennsylvania School of Dental Med., Philadelphia, PA.

A shortage of health manpower in rural areas necessitates evaluation of alternative methods for improving availability and access to dental care. An interdisciplinary study, the Rural Dental Health Program, was undertaken to determine the actual reduction in oral disease and cost savings possible through a carefully structured program of health education, prevention and restorative treatment for children. The objectives include assessment of an oral health education program integrated into a school curriculum, determination of the effectiveness of a preventive regimen, and determination of the relative efficiency of 3 delivery systems.

This study is being conducted in cooperation with the Juniata Co. School District. One-half of the schools continue the existing health education program, the balance utilize a new supplemental dental health curriculum. 1900 children, ages 5-13, were randomly assigned to 1 of 3 dental treatment groups. Two groups receive dental care in a mobile unit as part of school activities. The third group utilizes local practitioners for dental services under a reimbursement mechanism administered by the study.

Annual oral examinations of all children monitor incremental disease levels among treatment and educational groups. Evaluation of changes in dental knowledge and behavior, of cost effectiveness, and of community response are also being conducted.

Financing Organization: The Robert Wood Johnson Foundation, Princeton, NJ, Grant #1937.

Current Status of Research: Duration-Feb. 1975-June, 1978. Data currently being analyzed.

Availability of Findings: Summer-Fall, 1977, from principal investigators.

DEVELOPING A METHODOLOGY FOR ESTIMATING THE COST-EFFECTIVENESS OF A RURAL DENTAL HYGIENE EDUCATION PROGRAM, John Kushman and Timothy Mulcahy, Dept. of Agricultural Economics, University of California at Davis, Davis, CA 95616.

The objective is to develop a practical methodology for estimating the reduction in state and private expenditures for restorative dental services which result from a dental hygiene education program in rural California. The reductions will be compared with program costs to determine cost-effectiveness.

Available data is used to quantify price and utilization elements of expenditures, and reductions in utilization are estimated from available physiological and behavioral studies. Cost estimates are taken from an ongoing program. Alternative estimates are derived for various staffing patterns.

Financing Organizations: University of California and California Agricultural Experiment Station.

Current Status of Research: Preliminary development completed.

Availability of Findings: From principal investigator, early 1977.

Alphabetized List of Researchers

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Ahearn, Mary C. (economist)	36
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Bernstein, James D. (health planner)	2
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Born, David O. (anthropologist)	27
Brown, David L. (sociologist)	42
Camacho, Zenaido	30
Cantwell, James (economist)	23,24
Carney, Kim (economist)	45
Chamberlain, Howard (industrial engineer and operations management)	4
Chapman, James A.	22
Chiriboga, Douglas (economist)	9
Ching, C. T. K. (economist)	37
Christianson, Jon (economist)	6,13
Cohen, D. W.	48
Cordes, Sam (economist)	10,15,16,22,27,36,46
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Crawford, Charles (sociologist)	15,46,48
Cunningham, Anne	8
Daberkow, S. G. (economist)	38
Davidson, Robert C. (physician)	31
Davis, Karen (economist)	2,3
Defriese, Gordon F.	2
Doeksen, Gerald (economist)	13,15,37
Doyle, Rachel	38
Drui, A. B.	4
Dunn, Jim (economist)	37
Eisenberg, Barry S. (economist)	3,24
Fein, Rashi (economist)	26
Fitzgerald, Jane	41,43
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Frate, Dennis A.	28,36
Gerweck, John (economist)	27
Gordon, Martin (health planner)	46
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Greenwood, Judith	5
Grinstead-Schneider, Mary Jo (anthropologist)	7,19,20,38,41,43,44
Hanson, Ivan (economist)	13
Hartin, Gene	46
Hassinger, Edward (sociologist)	9
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Keine, Werner	45
King, C. A.	38
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Kushman, John (economist)	6,10,11,16,35,49
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Leadley, Samuel M. (sociologist)	46
Leatherman, Martha	7
Lein, John N. (physician)	39
Lemire, Ronald (physician)	31
Lewis, Charles E. (physician)	26
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Mechanic, David (sociologist)	26
Meyer, Neil (economist)	5
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Roemer, Milton I. (physician)	26
Roemer, Ruth	26
Ryan, Vern (sociologist)	7
Sargent, Charles (economist)	7
Sax, Ellen	24,25,28
Scheffler, Richard (economist)	10,11
Schelzel, George W.	48
Schmid, A. Allan (economist)	45
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Schutz, Willard D. (economist)	14
Schwartz, Lawrence (economist)	23
Schwarz, M. Roy (physician)	29,30,31,39
Ship, I. I. (dentist)	48
Slesinger, Doris P. (sociologist)	44
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Unterman, Barbara.	24
Updegraff, Gail (economist)	45
Voth, Donald (anthropologist)	7
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Williams, Darrel	30
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APPENDIX

THE PENNSYLVANIA STATE UNIVERSITY
WEAVER BUILDING
UNIVERSITY PARK, PENNSYLVANIA 16802

College of Agriculture
Department of Agricultural Economics
and Rural Sociology

Area Code 814
865-5461

December 1, 1976

Approximately two years ago, the Farm Foundation and the American Medical Association's Department of Rural Health sponsored a Rural Health Care Research Forum in Roanoke, Virginia. The purpose of the forum was to assess recent social science research on rural health care delivery and to provide interchange among researchers who usually have little communication with one another.

As one of the three speakers at the Forum, I found it to be extremely beneficial. I believe the other speakers and the researchers present shared my reaction. Since that time, I have been jotting down the names (from journals and other sources) of researchers who apparently are doing or have recently completed research on the socioeconomic aspects of rural health care delivery. Your name is one of many that I have since compiled and I am now in the process of contacting these persons to find out a bit more about their research. In order to facilitate this process, it would be most helpful to me if you could take a few minutes to complete the enclosed reporting form and return it to me.

Please return the reporting form even if you are not currently doing research or have not completed any research within the past 2-3 years. In this case, simply sign the form and write on it: "No Research to Report."

AN EQUAL OPPORTUNITY UNIVERSITY

After receiving this information, it is my intent to compile it and circulate it to all those who have responded to my inquiry. In that way, those of us who have some interest in social science research on rural health care delivery will have a better grasp of what others have and are doing.

Your cooperation will be appreciated.

Sincerely yours,

Sam M. Cordes
Assistant Professor

SMC/ksp

Enclosure

SOCIAL SCIENCE RESEARCH ON RURAL HEALTH CARE DELIVERY

Reporting Form

INSTRUCTIONS--Please read carefully

1. If you have more than one research study on which to report, simply photocopy and complete the reporting form as many times as is necessary. Report only one study on a reporting form. Try to ensure that each study on which you report fits within the reporting form. It is not necessary to leave a margin.

2. The first item entered in the reporting form should be the title of the research study and should be capitalized. Follow title with principal researcher's name and address.

3. The next portion of the reporting form should include information on major objectives of the research, methodology, and principal findings (if research is complete).

4. The last portion of the form should include the following information:
   Financing Organization
   Current Status of Research
   Availability of Findings

5. Please type. Single space except between paragraphs. Use three-space indentations for all paragraphs. Use numerals rather than words.

6. Attached is a sample reporting form that has been completed for your use as a guide.

7. Please return your reporting form(s) by December 22, 1976 to:
   Dr. Sam Cordes
   The Pennsylvania State University
   8 Weaver Building
   University Park, PA 16802

8. Please list on a separate sheet the names and addresses of researchers with whom you work that you think should receive this inquiry. My list of researchers is certain to be somewhat incomplete and your help in making it more complete will be appreciated.

_____
(Signature of Principal Researcher)

Principal Researcher's profession:

☐ Anthropologist ☐ Physician or Dentist

☐ Economist ☐ Psychologist

☐ Health Planner ☐ Sociologist

☐ Other (please specify)

SOCIAL SCIENCE RESEARCH ON RURAL HEALTH CARE DELIVERY

INSTRUCTIONS--Please read carefully

1. If you have more than one research study on which to report, simply photocopy and complete the reporting form as many times as is necessary. Report only one study on a reporting form. Try to ensure that each study on which you report fits within the reporting form. It is not necessary to leave a margin.

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_____
(Signature of Principal Researcher)

Reporting Form

FACTORS INFLUENCING WHETHER OR NOT NATIONAL HEALTH SERVICE CORPS' (NHSC) PHYSICIANS REMAIN IN THEIR ASSIGNED COMMUNITIES,
John Gerweck and Sam Cordes, Department of Agricultural Economics, Penn State University, University Park, Pa. 16802.

The objective of this study is to isolate and determine the relative importance of those factors influencing whether or not NHSC physicians remain in their assigned communities beyond the two-year obligatory period. Physicians placed in communities in 1972, 1973 and 1974 have been surveyed to determine how long they stayed in their assigned communities. Explanatory variables generated from this survey focus on the physician's personal and professional background, motivation for joining the NHSC, and view of the community to which he or she was assigned. Explanatory variables from secondary sources which are included in the analysis focus on the community's economic condition, degree of professional isolation, and quantity and quality of recreational and cultural amenities and public services. Multivariate statistical techniques are being used to analyze the data.

Financing Organization: The Pennsylvania State University's Agricultural Experiment Station.

Current Status of Research: Analysis of data has just begun.

Availability of Findings: Summer 1977, from principal researchers.

Principal Researcher's Profession:

- [ ] Anthropologist
- [ ] Physician or Dentist
- [X] Economist
- [ ] Psychologist
- [ ] Health Planner
- [ ] Sociologist
- [ ] Other (please specify)